Minutes of spin meeting 03/26/08

Fanglei presented her preliminary results for spin tracking study with large 9th harmonic vertical orbit components around resonance $36 + \nu_y$. In the presence of two partial snakes, it has been observed that the polarization diminished with a large sine 9th vertical harmonic component. However, the spin tracking with only sine 9th harmonic failed to reproduce the zero polarization measured. Fanglei added cosine 9th vertical harmonic in the tracking recently, and the preliminary results show that the polarization can reach zero with large cosine component. This needs to be confirmed by simulation with zero cosine component and check betatron tunes of the MAD files used. She is also going to check the polarization loss right at the point when orbit bump was introduced: is the lattice smooth there? The orbits were generated by putting in currents in the 48 orbit correctors. Leif and Yousef pointed out that the spin tracking did not give a smooth flat region on both edges of the curve. Probably an error bar from the simulation should be included. Alfredo commented that one can get output of the error bars from the spink code. Mei questioned if the emittance changed during the measurements. The answer probably is no but should be crosschecked.

Nick continued with his analysis with BtA profiles. This is probably the same old story: The emittance and beta function extracted from the BtA profiles does not match the expected values from Booster extraction for both horizontal and vertical directions. If using only three multiwires (without MW060), the calculated beta functions at Booster extraction are closer to the model prediction. The lattice at AGS A15 multiwire can also be calculated. There is a different problem here: the lattice is not stable with the B3 quad current as dialed in. Dejan asked if any steering test was done to check the optics in BtA. Woody said there were intensive data set for deuteron beam, and some data for proton beam. In the meantime, Woody is also searching for the BtA model from old days.

Haixin